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hardly realize the boon the establishment of this journal was to the naturalists of the country, and few know its financial vicissitudes and the sacrifices of its editor during its early days.

Personally, Dr. Packard was one of the most companionable of men. He was always ready to aid and assist the young in their natural history studies to the extent of his powers. He was critical of the language in which they clothed their facts and the pages of the *Naturalist* have profited by his revision. He rarely indulged in controversy, and although he could say sharp and cutting things, one may look in vain in his published works for any traces of polemics.

Dr. Packard was married in 1867 to Elizabeth Derby, the daughter of the late Samuel B. Walcott, of Salem, who, with four children, one a rising naval architect, survives him.

J. S. KINGSLEY.

TUFTS COLLEGE, MASS.

ALPHEUS SPRING PACKARD.*

I have not known Professor Packard as long, nor as intimately, as many of my colleagues; and where they have spoken I should remain silent. Neither am I qualified to discuss his more immediate scientific work. I can, however, in response to the President's suggestions, speak of him in the light in which one scientific man sees another, older and wiser than himself; but I do so with diffidence. I have, therefore, written down with some care the things which I would not otherwise venture to express.

It seems an ungracious confession to make, but it is nevertheless true, that it was through Professor Packard that many of us in Washington, twenty or thirty years

* Address given at the memorial exercises at Brown University. Printed in *SCIENCE* at the request of the editor.

ago, became aware of the existence of scientific activity at Brown University. For age had wearied the enthusiasm of Alexis Caswell twenty years earlier. Yet it was not by his presence that Packard represented her; at least in the years in which I knew him, he was not a frequent attendant at scientific meetings remote from Providence. It was his untiring and remarkably pervasive industry that confronted us. The president of the National Academy, the director of the Geological Survey and others in authority all felt the force of it; and at one time there were dismal mutterings in the high places of legislation asking why the public printer's time should be spent in bringing out the elaborate researches of one who stood remote from public office. How did this come about? Certainly a man of Professor Packard's singular modesty, of his almost morbid habit of self-depreciation, was the last to find his way through the mazes of a government lobby. His transparent sincerity would have been infinitely removed from all this. And yet there was no mystery about it. It was a mere force from within breaking its way. The power of Professor Packard's intellect bearing on subjects of natural history, the scope and accuracy of his learning and the purity of his scientific ideals were his only resources; and wherever institutions needed the fruits of ripe scholarship to dignify their own scientific activities, these were the first to feel the influence of Professor Packard's productive zeal, as they were compelled to guide its progress. And so our unobtrusive colleague taxed the people of the whole United States to publish his magnificent memoirs—because he was genuine.

The same facts appear in a different way, in the further story of Professor Packard's life. I am the last man to speak lightly of the young vigor and the promise of our American institutions, or of our

learned societies. But it is nevertheless true that in comparison with the famous academies of the old world we are as yet mere children. In a history of the *essentials* in the progress of science, there is but rare need of the mention of American accomplishments. We have much of the practise, and we show a degree of independence in our imitations; but we lack the philosophic depth, the intuitions and the profound originality. It is to the lawgiver of science that the true academy is born, and it is by her lawgivers again that it must be nurtured. To men of exquisite genius no climate within the whole range of our immense country has yet been congenial.

We are apt to smile at the Englishman for the letters which decorate his name. We laugh at the German for his titles and at the Frenchman for his ribbons and his uniform. We smile because to us such insignia mean nothing; and it is to our shame. We forget that these symbols voice a sentiment of almost religious purity. We have not yet learned to constitute nor even to revere a tribunal so august as to be incompatible with pettiness. We never ask why the F.R.S. is inseparable from the names of Lord Kelvin, of Lord Lister, even in their age and amid the splendors of their glory. To make the French Academy, even on its scientific side, required the brains of Cuvier, of Lamarck, of St. Hilaire, of Buffon, of the brothers Jussieu, of Pasteur; it required Laplace, Lavoisier and Lagrange, Carnot and Cauchy, Fresnel and Fourier, Ampère and Arago, Poisson and Poincot, to mention only a few; and the dictum of the academy arbitrates with the authority of these tremendous names.

Precisely to such bodies of inexorable critics did the intrinsic strength of the work of Professor Packard ultimately appeal. And it was from the judgment of his confrères, from the men who had them-

selves traversed the same intellectual territory and knew it, that he reaped his supreme honors. From these alone could the reward have come; for below the decisions of his peers, there was no other guide but conscience.

Few of us realize how difficult it is, what persistent convictions, what sturdy vigilance is required to enter seriously into competition with the whole world, as Packard did; indeed one might say to enter handicapped, against a world richer in its traditions, more refined in its higher intellectual atmosphere, more bountiful in its opportunities, than our young country. It takes courage to press forward alone, self-reliant, misunderstood, at peace only with one's own convictions. Did we think of this in Packard's case? Did we look at his Linnean and other honors in this light? Did even our corporation feel that the *cause* of which it is the supreme guardian, had in Packard been awarded with the most cherished tokens of the world's approval?

Packard was not lacking in his reverence for art, for literature, for music; but his soul cried out for science. He felt instinctively that the handiwork of man, however sublime, can not be more than human; and that a finite brain has fashioned all its cultures. Nature is the offspring of omniscience. He realized what the world was so slow to realize, what only within the last few hundred years has come like a tumultuous awakening, that the universe was wrought in the workshops of God, and that she alone is ultimately divine. He felt too that her true poetry is not written in rhetoric but in mathematics and in the stern logic of science. For all our natural philosophies are but an attempt at a picture. We find no adequate symbols in our efforts to restate her methods; our analogies, our metaphors, are gross; we have to shift, to approximate, to neglect. But nature neg-

lects nothing! To her the infinitely large and the infinitely small on the boundaries of which we live are alike finite among her infinities. Touch her at any point and your contact is with the eternal.

To contemplate the prolific labors of Professor Packard is to stand face to face with the attributes of genius. I do not wish to make an over-statement. True, there is an order of genius among the geniuses, but there is none in whose heart the sacred fire does not burn. There can be no holier joy than the joy of creative work, and yet it is a joy akin to terror. What is it which possesses a man even in early youth, which impels him despite all obstacles and restraint to strive evermore, intellectually alone, without approval, profitlessly after an unattainable ideal; whose spell grows more potent as his years ripen, as his toil increases, as the world grows caustic in its rebuke; and that leaves him only with death? Do not suppose that the poet or the sculptor or the martyr alone have it. It burns to-day with subdued passion but with all its pristine and unmitigated fierceness in the life of every true student of nature.

What is it that can sustain a man when every new avenue of thought discovered is but the approach to countless avenues beyond; when to finish, be it after years of labor, is only to be ready to begin; what encourages him when the unknown looms with greater vastness as the known is more profoundly mastered; when the very pinnacle of attainment is the sublime consciousness of ignorance, and when to be most renowned is to be most devoutly humble? It is the inspiration which illumined the life of our friend, our colleague, our teacher. Long may his ideals guide us at Brown!

CARL BARUS.

BROWN UNIVERSITY.

THE ASTRONOMICAL AND ASTROPHYSICAL SOCIETY OF AMERICA.

THE sixth meeting of the society was held December 27-30, 1904, at Philadelphia, Pa., during convocation week, in affiliation with the American Association for the Advancement of Science.

Three sessions of the society for the reading and discussion of papers and the transaction of business were held in room 106, College Hall, University of Pennsylvania, on Wednesday, Thursday and Friday afternoons. The number of members present at some time during the meeting was thirty-six and the average attendance was about fifty.

A pleasant social feature connected with the meeting was an informal dinner at the Hotel Walton, Thursday evening, at which twenty-six members and friends were present. Through the courtesy of Director Doolittle, a number of the members had the pleasure of examining the equipment of the Flower Observatory of the University of Pennsylvania at Upper Darby, and by the courtesy of Professor Snyder the extensive astronomical equipment of the Philadelphia Observatory was inspected by a considerable party.

During the meeting five new members were elected. The selection of a time and place for the next meeting was left open for future action by the council.

The officers elected were:

For 1905:

President—Simon Newcomb.

First Vice-President—George E. Hale.

Second Vice-President—W. W. Campbell.

Treasurer—C. L. Doolittle.

For 1905-6:

Councillors—W. S. Eichelberger, Ormond Stone.

On account of the contemplated absence from the country of G. C. Comstock for the greater part of the year 1905, W. S. Eichelberger was elected by the council as acting secretary.